

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A current collector and seal combination for an electrochemical sensor having a housing, in which are located sensing and counter electrodes in contact with a liquid electrolyte, and connection apertures in a wall of the housing, the current collector and seal combination including:

a flexible, metal current collector adapted for direct contact with one of the sensor's electrodes and

a compliant seal of a thermoplastic elastomeric material over-molded directly onto the flexible, metal current collector, the compliant seal inserted into adapted to fit in the one of the connection apertures, the current collector extending through the compliant seal,

the seal being in contact with the collector substantially throughout its length along the current collector and

~~the seal being of an elastomeric material,~~

the arrangement being such that compressive stress induced in the seal by reaction from the connection aperture urges the seal into distributed sealing contact with the current collector substantially throughout the length of the seal.

2. (Original) The current collector and seal combination of claim 1, wherein the seal is longer than its outer diameter or other major cross-sectional dimension.

3. (Original) The current collector and seal combination of claim 2, wherein the ratio of the seal length to outer diameter is of the order of 3:1 at least.

4. (Original) The current collector and seal combination of claim 1, claim 2 or claim 3, wherein the ratio of the length and/or the diameter of the seal to the diameter of the current collector is at least of the order of 10:1.
5. (Original) The current collector and seal combination of claim 1, claim 2, or claim 3, wherein the ratio of the length of the seal to the diameter of the current collector is at least of the order of 30:1.
6. (Original) The current collector and seal combination of claim 1, wherein the compliant seal is injection moulded as an over-moulding onto the current collector.
7. (Original) The current collector and seal combination of claim 1, wherein the compliant seal is moulded with a central through-bore for threading of the current collector through it.
8. (Original) The current collector and seal combination of claim 1, wherein the compliant seal is moulded with a slot, nick or notch, for introduction of the current collector into it.
9. (Original) The current collector and seal combination of claim 1, wherein the compliant seal is moulded as two complementary halves having a central groove for receiving the current collector.
10. (Original) The current collector and seal combination of claim 1, wherein the seal has one or more ridges extending around its outer circumference.
11. (Original) The current collector and seal combination of claim 1, wherein the seal has a cylindrical body and a larger diameter outer end boss.
12. (Original) The current collector and seal combination of claim 1, wherein the seal has a tapered nose.

13. (Original) An electrochemical gas sensor having:
a housing having at least one wall and a plurality of connection apertures through the wall, the apertures having bores,
sensing and counter electrodes in the housing,
a liquid electrolyte contained in the housing in chemical contact with the electrodes, and
a plurality of current collectors in electrical contact with respective ones of the respective electrodes;
the plurality of current collectors and respective electrodes characterized in that:
the plurality of current collectors in combination with a corresponding plurality of compliant seals are arranged in accordance with the current collector and seal combination of claim 1;
wherein the current collectors extend within their seals through respective ones of the apertures from their electrodes to outside the housing; and the compliant seals are in compression against both their current collectors and at least part of the bores of their apertures,
whereby the current collectors provide means for electrical contact outside the housing and the apertures are sealed.

14. (Currently Amended) The electrochemical sensor of ~~claim 12~~ claim 13, wherein the seal is an interference fit in the aperture.

15. (Currently Amended) The electrochemical sensor of ~~claim 12 or~~ claim 13, wherein the seals have cylindrical bodies and the larger diameter outer end bosses and the connection apertures have a complementary shape.

16. (Currently Amended) The electrochemical sensor of ~~claim 12, claim 13 or claim 14,~~ including metallic end caps clipped to the housing and captivating the current collectors, thereby providing electrical connections for the sensor.

17. (Currently Amended) An electrochemical gas sensor having:
a housing having at least one wall and a plurality of connection apertures through the wall, the apertures having bores,

sensing and counter electrodes in the housing,
a liquid electrolyte contained in the housing in chemical contact with the electrodes, and
a plurality of current collectors in electrical contact with respective ones of the respective
electrodes;

the plurality of current collector and respective electrodes characterized in that:

the plurality of current collectors in combination with a corresponding plurality of
compliant seals are arranged in accordance with the current collector and seal combination of
claim 1, wherein

the current collectors extend through respective ones of the apertures from
their electrodes to outside the housing;

the compliant seals are in compression against both their current collectors and at least
part of the bores of their apertures, whereby the current collectors provide means for electrical
contact outside the housing and the apertures are sealed;

the current ~~collects~~ collectors are preliminarily located in the connection apertures;

the compliant seals are back-fillings of sealing material into the connection apertures; and
the back-fillings are compressed by end caps.

18. (Original) The electrochemical sensor of claim 17, wherein the end caps are metallic,
clipped to the housing, and captivate the current collectors, thereby providing electrical
connections for the sensor.

19. (Original) The electrochemical sensor of claim 13, or claim 17, wherein the elastic
modulii of the housing and of the seal differ by at least two orders of magnitude, the housing
being stiffer and the seal being more compliant.

20. (Canceled) A method of manufacturing a current collector and seal combination for an
electrochemical sensor, the method comprising the steps of: moulding a seal about the current
collector using an injection moulding tool; indexing the current collector and moulded seal with
respect to the tool; and repeating the moulding process.

21. (Canceled) A method of manufacturing a current collector and seal combination for an electrochemical sensor, the method comprising the steps of: moulding a sensor housing wall with a connection aperture about the current collector using an injection moulding tool, the current collector being free in the connection aperture; and moulding a compliant seal in the connection aperture.